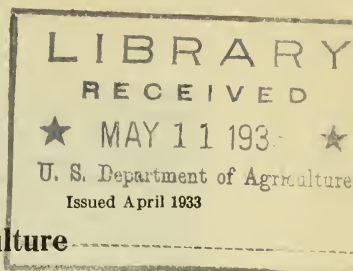


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United States Department of Agriculture

BUREAU OF AGRICULTURAL ECONOMICS

SERVICE AND REGULATORY ANNOUNCEMENTS NO. 141

UNITED STATES STANDARDS FOR GRADES OF CANNED TOMATOES

(Approved January 16, 1933)

DEPARTMENT OF AGRICULTURE,
Washington, D. C.

By virtue of the authority vested in the Secretary of Agriculture by the provision in the act of Congress entitled "An act making appropriations for the Department of Agriculture for the fiscal year ending June 30, 1933, and for other purposes" (Public, No. 269, 72d Cong.), approved July 7, 1932, authorizing an inspection service for farm products, I, Arthur M. Hyde, Secretary of Agriculture, do prescribe and promulgate the following standards for grades of canned tomatoes, to be in force and effect on and after January 16, 1933, and as long as Congress shall provide the necessary authority therefor, unless amended or superseded by standards hereafter prescribed and promulgated under such authority. These standards shall supersede all standards for canned tomatoes previously promulgated.

In testimony whereof I have hereunto set my hand and caused the official seal of the Department of Agriculture to be affixed in the city of Washington this 16th day of January, 1933.



Arthur M. Hyde

Secretary of Agriculture.

DEFINITION

Canned tomatoes are the canned vegetable prepared from sound, ripe, fresh tomatoes, of any red variety or varieties, by thoroughly washing and scalding, and by proper peeling, coring, and trimming, with or without the addition of sugar and/or salt, packed in hermetically sealed containers, and sterilized by heat. The liquor used for filling the spaces between the vegetables is the natural juice of the tomatoes and does not exceed in quantity the juice derived, during proper peeling, coring, and trimming, from the tomatoes in the can. However, the juice of other tomatoes of the same quality and preparation may be used, provided the total quantity of juice is not increased, except as hereinafter provided.

GRADES OF CANNED TOMATOES

U. S. Grade A (fancy) canned tomatoes are select tomatoes which are whole or almost whole; are of uniformly good red color; are practically free from pieces of skin, cores, blemishes, and other defects; possess the typical flavor of naturally ripened tomatoes; and score not less than 90 points when scored according to the scoring system outlined herein; provided, that only one factor may have a rating in and not below the range of 15 to 17 points.

U. S. Grade B (extra standard or choice) canned tomatoes are canned tomatoes which are whole or in large pieces; red in color; and practically free from under-

colored parts, pieces of skin, cores, blemishes, and other defects; possess a desirable flavor; and score not less than 75 points and need not score more than 89 points when scored according to the scoring system outlined herein; provided, that but one factor may have a rating in the range of 12 to 14 points.

U. S. Grade C (standard) canned tomatoes are canned tomatoes which need not be whole, but consist of fairly large pieces; are reasonably free from under-colored parts and from pieces of skin, cores, blemishes, and other defects; possess a fairly good flavor; and score not less than 60 points and need not score more than 74 points when scored according to the scoring system outlined herein.

Off-Grade Quality (substandard) canned tomatoes are canned tomatoes which fail to meet the requirements of the foregoing grades, or, when any one of the grading factors falls into the subdivision D, or, which fall below the standard promulgated under the terms of section 8, paragraph 5, of the Food and Drugs Act.

NOTE.—Certificates of grade issued under the United States Warehouse Act or the Farm Products Grading Law covering canned tomatoes falling below the standard promulgated under the terms of section 8, paragraph 5, of the Food and Drugs Act, must bear the legend required under that act in the space for "Remarks."

PREREQUISITES TO GRADING

CONDITION OF CONTAINER

Containers shall be sound and clean. If the containers are metal, they shall be free from rust and serious dents, and the ends shall be flat or concave.

CONDITION OF PACKAGE AND LABEL

If cased, the canned tomatoes shall be packed in clean, neat, unbroken packages. If labeled, the labels on the container and package shall be clean, and shall be neatly and securely affixed, and shall comply in all respects with the requirements of the Food and Drugs Act.

FILL OF CONTAINER

Cans of tomatoes will be considered as of standard fill if the head space, measured from the top of the product to the underside of the lid, does not exceed 10 percent of the total inside height of the container, and if the packing medium is not in excess of the quantity necessary for proper processing without impairment of quality.

A certificate of grade covering canned tomatoes that do not meet the above requirements shall bear the legend,

"Below U.S. Standard"

"Slack Fill"

A certificate of grade covering canned tomatoes that do not meet the above requirement in that the packing medium is excessive, whether or not the head space is excessive, shall bear at least the 2-line legend

"Below U.S. Standard—Slack Fill"

"Contains Excess Added Liquid"

Provided, That when peeled and cored whole tomatoes are packed and processed in such a manner as to retain the tomatoes in a practically whole condition when opened, the liquid is not considered excessive when there is added the juice of other peeled, cored, and trimmed tomatoes in quantity not exceeding that necessary to fill the interstices.

The following table indicates the dimensions and names of containers most commonly in use. The last column indicates the maximum head space allowance to meet the above requirements.

Can size	Can dimensions (in inches)		Maximum capacity in water at 68° F. (in ounces)	Maximum head space allowable (measured from top of double seam in six- teenths of an inch)
	Diameter	Height		
8 Z short.....	2 $\frac{1}{16}$	3	7.93	7.2
8 Z tall.....	2 $\frac{1}{16}$	3 $\frac{1}{16}$	8.68	7.6
Picnic (no. 1 eastern).....	2 $\frac{1}{16}$	4	10.94	8.8
No. 300.....	3	4 $\frac{1}{16}$	15.22	9.5
No. 300 x.....	3	4 $\frac{1}{16}$	15.69	9.7
No. 1 flat.....	3 $\frac{1}{16}$	2 $\frac{3}{16}$	8.23	6.4
No. 1 short.....	3 $\frac{1}{16}$	4	14.02	8.8
No. 1 tall.....	3 $\frac{1}{16}$	4 $\frac{1}{16}$	16.70	9.9
No. 303.....	3 $\frac{1}{16}$	4 $\frac{1}{16}$	16.88	9.4
No. 2 flat.....	3 $\frac{1}{16}$	2 $\frac{1}{16}$	9.21	6
No. 2 squat.....	3 $\frac{1}{16}$	3 $\frac{1}{16}$	13.50	7.4
No. 2 short.....	3 $\frac{1}{16}$	4	17.79	8.8
No. 2 special.....	3 $\frac{1}{16}$	4 $\frac{1}{16}$	20.25	9.6
No. 2.....	3 $\frac{1}{16}$	4 $\frac{1}{16}$	20.55	9.7
No. 1 $\frac{1}{4}$ special.....	4 $\frac{1}{16}$	2 $\frac{3}{16}$	13.38	6.1
No. 1 $\frac{1}{4}$	4 $\frac{1}{16}$	2 $\frac{1}{16}$	13.81	6.2
No. 2 $\frac{1}{2}$	4 $\frac{1}{16}$	4 $\frac{1}{16}$	29.79	9.9
No. 3.....	4 $\frac{1}{16}$	4 $\frac{1}{16}$	35.08	10.2
No. 10.....	6 $\frac{1}{16}$	7	109.43	13.6

ADDITION OF TOMATO PRODUCTS

Certificates of grade covering canned tomatoes that fail to conform to the definitions hereinbefore mentioned, in that they contain added tomato products, shall bear a special explanation statement to indicate the fact as, for example, "Tomatoes with puree from trimmings."

ASCERTAINING THE GRADE

The grades of canned tomatoes may be ascertained by considering the following factors: Percentage of whole tomatoes, solidity, color, absence of defects, and flavor. The relative importance of each element has been expressed numerically on a scale of 100. The maximum number of credits that may be given for each factor is:

	Points
I. Percentage of whole tomatoes.....	20
II. Solidity.....	20
III. Color.....	20
IV. Absence of defects.....	20
V. Flavor.....	20
Total.....	100

ASCERTAINING THE RATING OF EACH FACTOR

The essential variations within each factor are so described that the value may be ascertained for each factor and expressed numerically. The numerical ranges within each factor are inclusive. For instance, the range 12 to 14 means, 12, 13, and 14.

I. Percentage of Whole Tomatoes.

(A) To receive a rating within the highest group, 18 to 20 points, for this factor, the tomatoes must all be whole or practically whole. Tomatoes that score below 18 for this factor may not be graded U.S. Grade A, or fancy.

(B) If the majority of tomatoes are whole or in large pieces, from 15 to 17 points may be allowed.

(C) If the pack consists of fairly large pieces, from 12 to 14 points may be allowed. Tomatoes that fall in this classification shall not be graded above U.S. Grade C, or standard, regardless of the total score for the product.

(D) If tomatoes are in small pieces, from 0 to 11 points may be allowed.

II. Solidity.—The factor of solidity refers to the proportion of tomato meat to the juice present. Consideration shall not be given under this factor to the per-

centage of whole tomatoes in the can. The rating for this factor shall be based on the percentage of tomato meat after draining the sample over a screen containing two meshes to the inch for two minutes. The wire of the screen must be uniform in diameter, not less than 0.04 nor more than 0.07 inch. No. 2½ size cans and smaller are drained over a screen of the above description 8 inches in diameter; no. 3 size cans and larger over a screen 12 inches in diameter.

The following table indicates the rating for score which may be given for solidity for various sizes of cans based on the weight of tomato solids after draining: (For example, the net drained weight of a no. 3 size can is found to be 21 ounces. In the column headed no. 3, it will be found that a no. 3 can draining 21 ounces is entitled to 16 points credit in the score for solidity. Had it drained 21½ ounces, it would have been entitled to 17 points. In other words, no. 3 cans draining from 21 to 21.86 ounces are entitled to a score of 16 points; cans draining from 21.87 to 22.74 ounces are entitled to a score of 17 points, etc.)

Points	Drained tomato meat	Plenic, 2½ by 4 inches	No. 1 tall, 3½ by 4½ inches	No. 2, 3½ by 4½ inches	No. 2½, 4½ by 4½ inches	No. 3, 4½ by 4½ inches	No. 10, 6½ by 7 inches
	<i>Percent</i>	<i>Ounces</i>	<i>Ounces</i>	<i>Ounces</i>	<i>Ounces</i>	<i>Ounces</i>	<i>Ounces</i>
20.....	70	7½	11½	14¾	20¾	24½	76½
19.....	67½	7½	11¼	13¾	20	23¾	73¾
18.....	65	7½	10¾	13¾	19¼	22¾	71¾
17.....	62½	6¾	10¾	12¾	18¾	21¾	68¾
16.....	60	6¾	10	12¾	17¾	21	65¾
15.....	57½	6	9½	11¾	17¾	20¾	62¾
14.....	55	6	9¾	11¾	16¾	19¾	60¾
13.....	52½	5¾	8¾	10¾	15¾	18¾	57¾
12.....	50	5½	8¾	10¾	14¾	17¾	54¾

(In order to determine rating for solidity for cans the size of which is not mentioned above, find the capacity of can in question from the table on page 4. To determine the percentage of drained tomato meat, the proper score is found in column headed "Points" opposite the "Percent drained tomato meat" column. For example, the contents of a no. 2 can is 20.55 ounces. A no. 2 can of tomatoes drains 11½ ounces—approximately 55 percent of the contents of the can. A can draining 55 percent is entitled to 14 points credit in the score.)

Cans of tomatoes that contain drained weights less than 50 percent of capacity shall be given a credit of 0 to 11 points, determined by deducting 1 point for each 4½ percent deficiency in drained weight.

III. Color.

- Canned tomatoes that have a uniformly good red color may be given a credit of 18 to 20 points for this factor.
- If a good red color predominates, but a few under-colored parts or areas are present, a credit of 15 to 17 points may be allowed.
- If red is the predominating color but the tomatoes possess a considerable number of under-colored parts, they may be considered of only fair color and may be given a credit of 12 to 14 points. Tomatoes that fall in this classification shall not be graded above U.S. grade C, or standard, regardless of the total score for the product.
- If the color is pale or off-color in whole or large part, from 0 to 11 points may be allowed.

IV. Absence of Defects.—The factor of absence of defects refers to skins of tomatoes, the cores or portions thereof, and blemishes of all kinds, including sears and brown- or black-colored portions.

- To receive a rating within the highest group, 18 to 20 points, for this factor, the product must be practically free from the defects mentioned.
- If the defects are inconsequential and the product is reasonably free from defects, a credit of 15 to 17 points may be allowed.
- If the product is only fairly free from defects, a credit of 12 to 14 points may be allowed.
- If the defects are in excess of the standard for canned tomatoes promulgated under the Food and Drugs Act, from 0 to 11 points may be allowed.

V. Flavor.—The quality of flavor of canned tomatoes shall be classified from the standpoint of palatability.

- (A) To receive a rating within the highest group, 18 to 20 points, for this factor, the tomatoes must have an especially fine, clean, typical, properly ripened tomato flavor, with the aroma very fully developed and especially pleasing to the taste and smell.
- (B) Tomatoes that have a typical, desirable flavor but are lacking somewhat in the highly pleasing characteristics, may be given a credit of 15 to 17 points.
- (C) Tomatoes that possess a palatable flavor may be given a credit of 12 to 14 points. Tomatoes that fall in this classification shall not be graded above U.S. grade C, or standard, regardless of the total score for the product.
- (D) If the tomatoes possess an objectionable or distinctly disagreeable flavor, from 0 to 11 points may be allowed.

Certificate No. U. S. DEPARTMENT OF AGRICULTURE Applicant.....
 Lot or car No. Bureau of Agricultural Economics Address.....
 Number of cases in lot. Can size. Samples submitted by.....

SCORE SHEET FOR CANNED TOMATOES

Can mark.....	Label.....	Net weight (in ounces).....	Vacuum.....	Net drained weight (in ounces).....	Factors	Maximum score	Points allowable											
I. Percentage of whole tomatoes.....						20	(A) 18-20 (B) 15-17 (C) 12-14 (D) 0-11											
II. Solidity.....						20	(A) 18-20 (B) 15-17 (C) 12-14 (D) 0-11											
III. Color.....						20	(A) 18-20 (B) 15-17 (C) 12-14 (D) 0-11											
IV. Absence of defects.....						20	(A) 18-20 (B) 15-17 (C) 12-14 (D) 0-11											
V. Flavor.....						20	(A) 18-20 (B) 15-17 (C) 12-14 (D) 0-11											
Total score.....						100												
Grade.....																		

Remarks.....

Graded by

Date

Fee \$.....

